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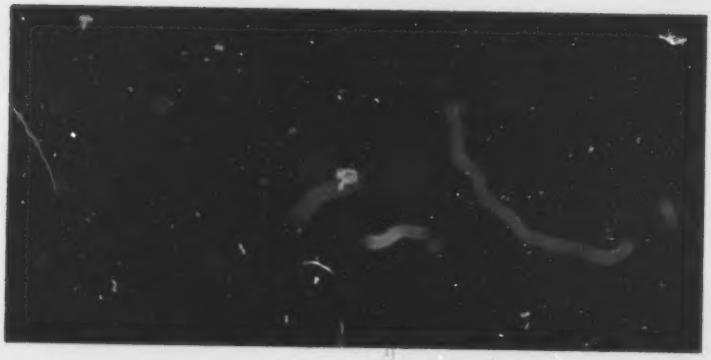
ABSTRACT

A system has been developed to identify, locate and evaluate learning materials for use in an external degree program in management at Syracuse University. It consists of five elements, each of which is a set of physical objects or documents: the interaction of these sets transforms the demand for learning materials into an output of retrieved information. These elements are: 1) a Vendor Address Card File; 2) a Vertical File of Current Catalogs, which identifies materials; 3) a McBee Keysort Card File, used to select materials by subject area; 4) the McBee Keysort Card File and Evaluation Forms, employed to recommend materials for acquisition; and 5) the Acquired Materials File and Materials Recommended for Purchase or Rental. In the course of developing the system, it was found that the available materials had widely differing influences upon the students' completion of prescribed courses; that advanced materials are hard to obtain; that materials dealing with the system sciences and computer programing are generally superior to those dealing with other subjects such as management, marketing or personnel; and that faculty cooperation must be increased for external degree programs to succeed. (PB)

ED 088478

MANAGEMENT RESEARCH CENTER REPORT



SCHOOL OF MANAGEMENT
SYRACUSE UNIVERSITY

SYRACUSE, NEW YORK 13210
TEL. (315) 476-5541, Ext. 2052

IR 000 311

ED 088478

To

The External Degree Planning Consortium

of the Policy Institute, SURC

on

# Identification of Learning Materials

January 1972

Prepared by

School of Management Task Force 4

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NATIONAL INSTITUTE OF EDUCATION
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IDENTIFICATION OF LEARNING MATERIALS
Task Force 4 External Degree
Feasibility Study

## OBJECTIVE

"Task 4 IDENTIFICATION OF LEARNING MATERIALS. This involves the planning and design of a program for locating and evaluating all forms of learning materials appropriate for use in the external degree program, including not only written textual materials but also all forms of audio-visual materials. An important part of the task is to design a system for the continuing location and evaluation of such materials." Memorandum of Richard Frost, SUPI to School of Management 3/26/71.

## INFORMATION SYSTEM DESIGN

This report describes elements of the system developed for identifying, locating and evaluating learning materials for use in an external degree program in management. System elements and their relationships are displayed in Figure 1. Each element is a set of physical objects or documents transmitted separately to the Syracuse University Policy Institute. Together their interaction as displayed in Figure 1 transforms the demand for learning materials into an output of retrieved information. Although developed in the order shown in the flow chart, they are discussed in the following order:

1. McBee Keysort Card File. Approximately 1,200 titles identified by source, subject matter, and medium are classified for manual keysorting.

2. Vertical file of current catalogs and brochures is classified by vendor name
3. Materials recommended for purchase or rental are classified by area of competence. A total approaching 80 items is recommended.
4. Acquired materials including programmed instruction books, sample audio tapes, and simulation workbooks and guides are classified by area of competence.
5. The vendor address card file listing names of approximately 130 sources is classified alphabetically by the name of the supplier.

(Figure 1 facing)

1. McBee Keysort Information Retrieval Card. The McBee card is the basic document for retrieving information describing learning materials located in vendor catalogs and brochures. Approximately 1,200 of these cards are in the MCBEEE KEYSORT CARD FILE. As displayed in Figure 2 each card contains four categories of information:

1. Area of competence in the field of management
2. Medium of communication
3. First three letters of title
4. Material review status

The areas of competence initially selected followed those recommended by Task Force 3 as far as feasible. Task Force 3, in a report issued by the Office of the Dean of the School of Management on November 10, 1971 specified the ten areas of competence displayed in Figure 3A Areas of Competence Classification. Thus, the areas of competence

FIGURE 1. Display of Elements in Learning Materials Information Retrieval System

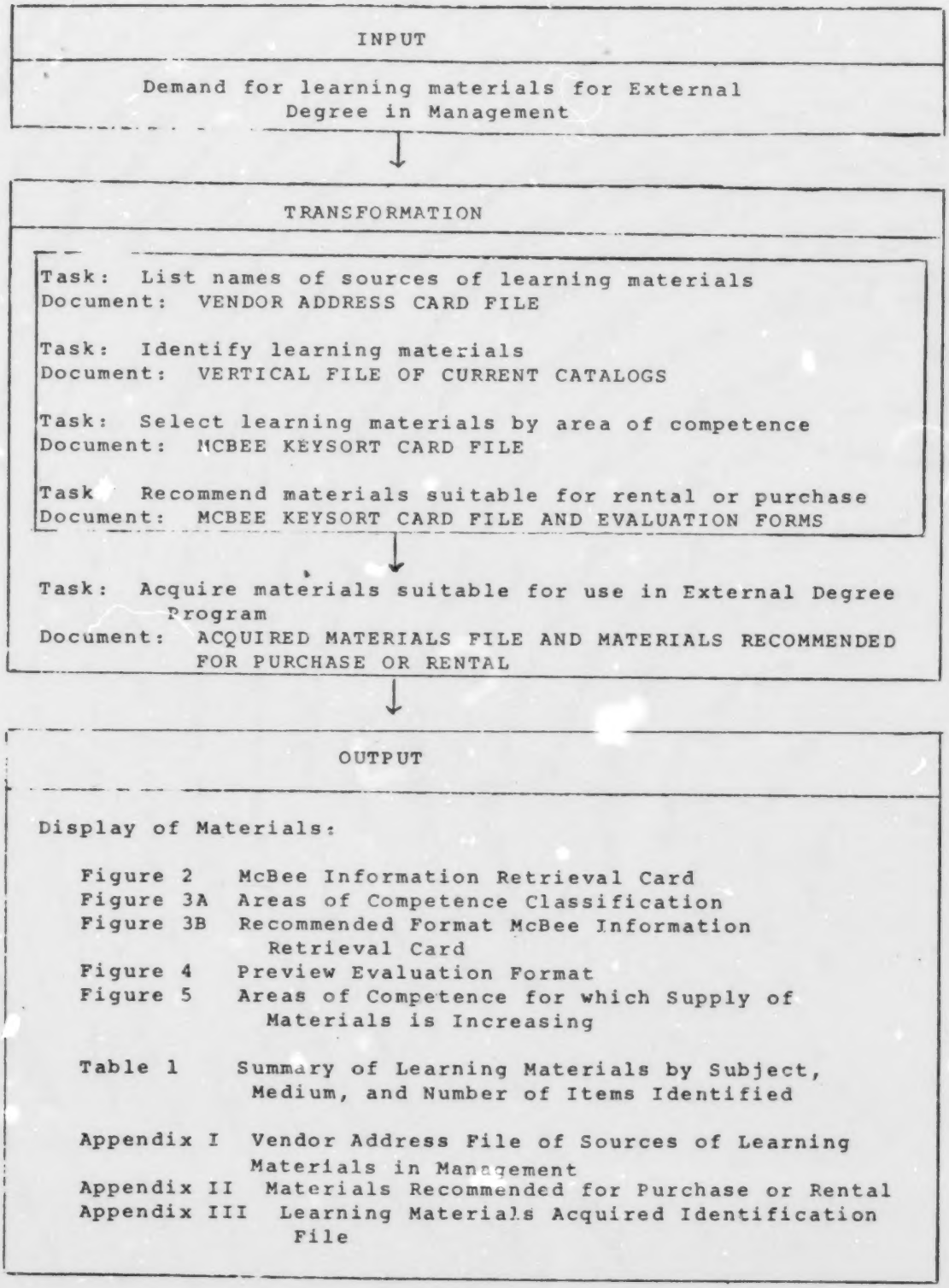
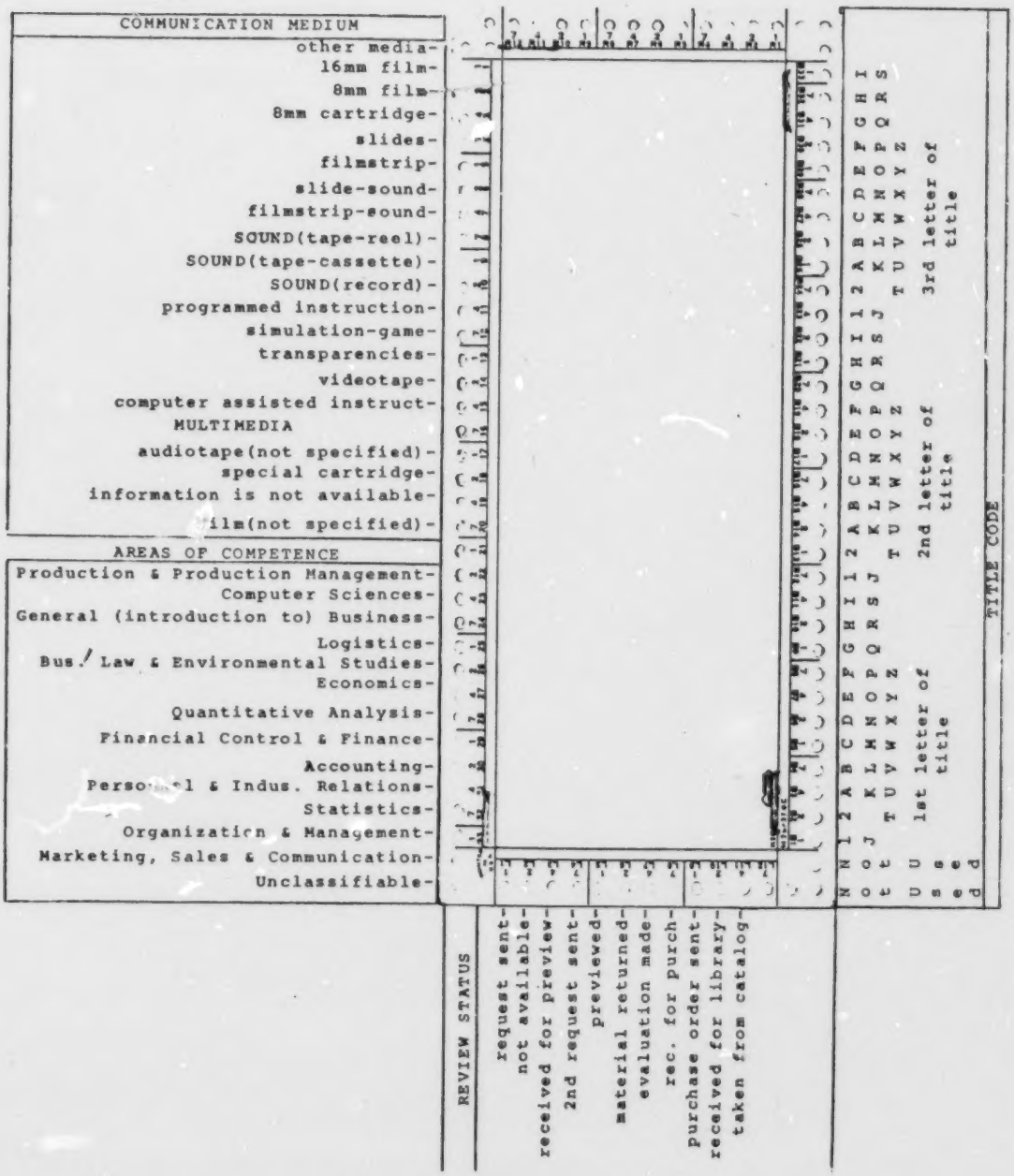

INPUT
Demand for learning materials for External Degree in Management
TRANSFORMATION
Task: List names of sources of learning materials
Document: VENDOR ADDRESS CARD FILE
Task: Identify learning materials
Document: VERTICAL FILE OF CURRENT CATALOGS
Task: Select learning materials by area of competence
Document: MCBEE KEYSORT CARD FILE
Task Recommend materials suitable for rental or purchase
Document: MCBEE KEYSORT CARD FILE AND EVALUATION FORMS
Task: Acquire materials suitable for use in External Degree Program
Document: ACQUIRED MATERIALS FILE AND MATERIALS RECOMMENDED FOR PURCHASE OR RENTAL
OUTPUT
Display of Materials:
Figure 2 McBee Information Retrieval Card
Figure 3A Areas of Competence Classification
Figure 3B Recommended Format McBee Information Retrieval Card
Figure 4 Preview Evaluation Format
Figure 5 Areas of Competence for which Supply of Materials is Increasing
Table 1 Summary of Learning Materials by Subject, Medium, and Number of Items Identified
Appendix I Vendor Address File of Sources of Learning Materials in Management
Appendix II Materials Recommended for Purchase or Rental
Appendix III Learning Materials Acquired Identification File

Figure 2. McBee Information Collection and Retrieval System



displayed in Figure 2 differ as follows from those described in the Task Force 3 Area of Competence Report: Whereas Task Force 3 divided Quantitive Analysis and Advanced Quantitative Analysis into two categories the McBee Classification groups these same materials into Statistics and Quantitative Analysis. Here quantitative analysis refers to operations research type models and simulations while statistics refers to descriptive and probability and sampling statistics. Similarly, the report of Task Force 3 separates Finance and Financial Information Systems. The McBee System classifies Financial Controls and Finance in a single category. Economics, not included in the ten Areas of Competence, is treated in the McBee system as a separate category. In addition, the following categories were added to the McBee card: Production and Production Management, Computer Science, and General (Introduction to) Business.

The medium of communication is a more complex problem than first appears because a number of combinations of tapes, programmed instruction manuals, workbooks and visual materials are already available, and the variety is increasing. There is little standardization beyond the 16 mm sound film, the audio-tape cassette and the 35 mm sound slide. The major rationale for particular combinations appears to be the skills and equipment of the producer, although some excellent user oriented film loop learning machine programmed instruction book combinations are available. As a short cut, a category called multimedia was added to embrace all of these combinations. Only a few multimedia materials including kits were actually received and previewed owing to budget and time constraints. However, multi-

media appear to hold much promise for external degree learning. Books and journal articles, while valuable, have not been included in the present system to avoid information overload.

The first three letters of the subject title are punched into the McBee cards along the bottom edge. Thus, if the first word in a title is "Auditing" the notches in each of the three fields will correspond to the letters, AUD. The word "The"is disregarded as a first word in a title.

The Review Status classification appears on the left edge of the card as displayed in Figure 2. It describes steps in the evaluation and acquisition process. By punching the appropriate numbers all steps taken can be readily updated to maintain a current status record. In addition, if an evaluation was made, a summary judgment was typed on the face of the McBee card. The criteria used in evaluations are displayed above in Figure 3B "Display of the Preview Evaluation Format." A number of materials which were identified could not be scheduled at times reviewers could examine them. Although located with ease, they may not readily be available for use, thus presenting scheduling obstacles in external degree programs.

Figure 4 displays the recommended McBee card revision. Modifications are mainly regrouping and addition of categories to increase the amount of information that can be retrieved with respect to areas of competence, medium and review status.

Figure 5 classifies areas of competence for which the supply of learning materials may increase. Major curriculum developments will have to encompass demands for these new classifications. As business administration diminishes as a field within the larger domain of community services and administration of nonprofit organizations, other categories not included in the Figure 4 display will undoubtedly gain representation.

Figure 3A. COMPARISON OF AREAS OF COMPETENCE BY Task Force 3 and Task Force 4

| Areas of Competence Recommended by Task Force 3 Report | Task Force 4 Areas of Competence Descriptors McBee Information Retrieval Card[1] |
|---|---|
| Marketing<br>Logistics<br>Operations Management | Marketing, Sales and Communications<br>Logistics<br>Production and Production Management<br>Organization and Management<br>General Introduction to Business |
| Personnel and Industrial Relations | Personnel and Industrial Relations |
| Finance<br>Financial Information Systems<br>Accounting | Financial Control and Finance<br>Accounting |
| Quantitative Analysis<br>Advanced Quantitative Analysis | Computer Sciences<br>Quantitative Analysis |
| Environmental Studies | Business Law and Environmental Studies |
| | Economics |
| | Not classifiable with information available |

[1]This classification is dictated by availability of material rather than by categories established by Task Force 3. Rapid developments in new areas require establishment of entirely new classifications such as are exhibited in Figure 5 below. The Figure 5 categories are illustrative since it is not now possible to foresee the relative speed of future developments which will require curriculum modifications.

Figure 3B DISPLAY OF THE PREVIEW EVALUATION FORMAT

Title

Kind of Material

Vendor

Target Population

Recommendations: Validity of Material
Relevance to undergraduate program School of Management
Age of Material

Faculty and graduate student evaluators previewed material in the following fields:

Accounting: Prof. Bourque, Mr. Nehmadi
Environment: Messrs. Chandran, Nehmadi, Venkatesh
Finance: Prof. Schmidt, Mr. Nehmadi
Marketing: Profs. Evans, Fisk, Mr. Chandran, Nehmadi, Ronsheimer, Venkatesh
Organization & Management: Prof. Gemmill,Swanson, Mr. Chandran, Mr. Nehmadi, General Lynn, Dean Allan
Personnel and Industrial Relations: Prof. Gemmill,Messrs, Nehmadi and Venkatesh
Quantitative Methods: Statistics Computer Information Sciences: Professors Fisk, Swanson, Wasserman, Moore

In addition to staff and faculty of the School of Management, previews were made by graduate students attached to the Instructional Technology Department. Most of these were in personnel and organization subjects. Reviewers in this group included: Paul Elliot, Martin Dodge, Philip Donaghue, Curtis Mustiful and Stanley Laber.

Figure 4. RECOMMENDED MODIFICATION OF MCBEE KEYSORT INFORMATION RETRIEVAL CARD FORMAT

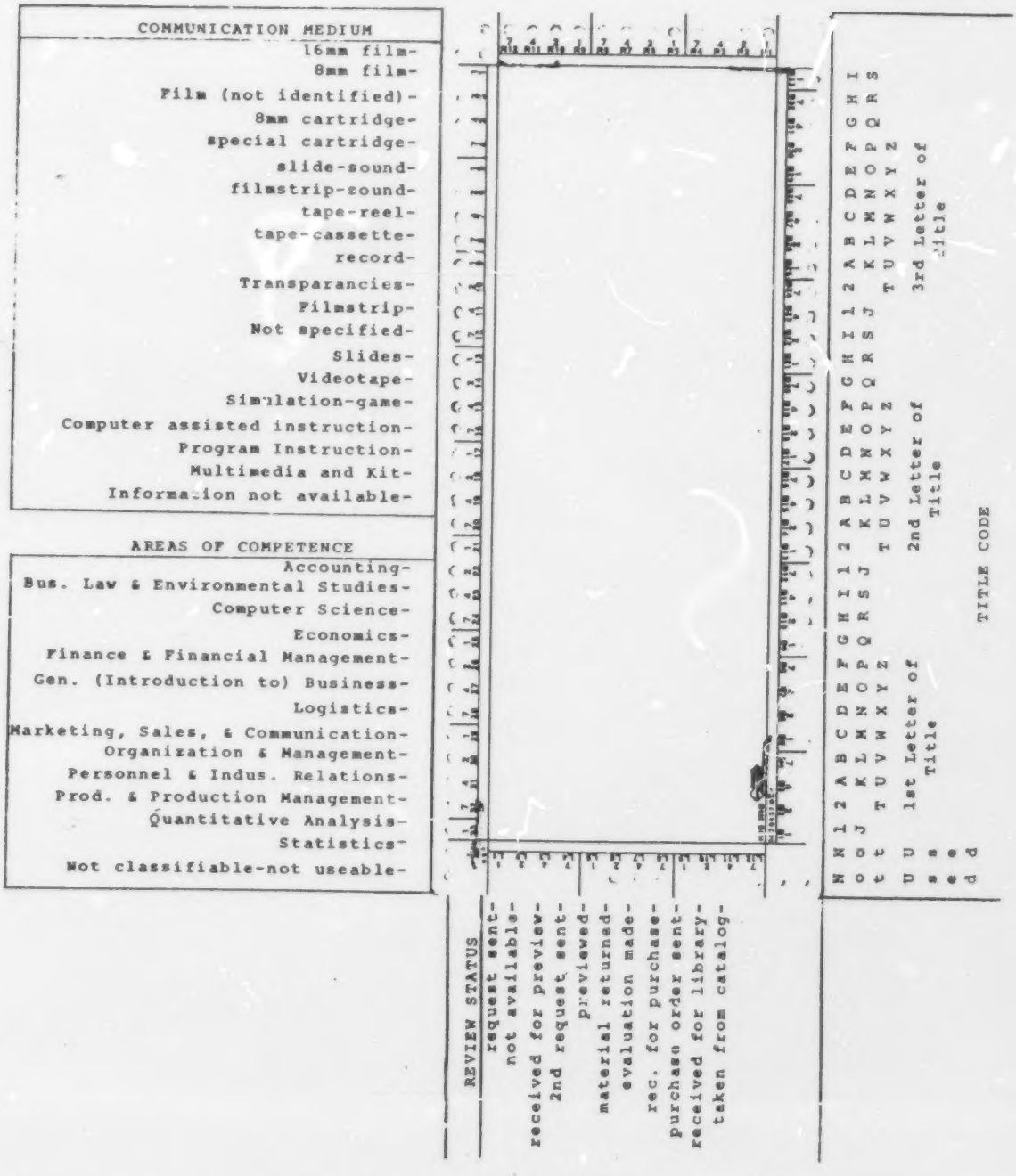


Figure 5 - Areas of Competence for which Supply of Learning Materials may Increase

Environmental Studies (additional categories)

- Ecological Systems Analysis
- Economics - Forecasting
- Social Indicators
- Socio-Technical Systems
- Technology Transfer

Information Sciences

- Computer Programming & Languages
- Financial Information Systems
- Management Information Systems
- Marketing Intelligence Systems
- Modeling and Simulation of Very Large Systems

Manpower Analysis

- Midcareer Training
- Minority Worker Motivation and Training
- Sensitivity Training

Multinational Business

- Multinational Finance
- Multinational Marketing
- Multinational Organizations
- World Organizations

Venture Analysis

- Entrepreneurial Risk and Resource Mobilization
- Futures Analysis
- Minority Enterprise Organization & Entrepreneurship
- Product Planning: Research & Development
- Project Management
- Strategic Planning

Table 1 summarizes the contents of the McBee Keysort Card File. It shows that learning materials are most plentiful in organization and management, marketing and personnel. These facts about subject, medium, title and review status are readily available by using the sorting device provided with the file. Notches cut in cards at the identifying position around the edges permit the desired cards to drop out of the deck when lifted. New information may be added simply by using the punch also supplied with the card deck.

Table 2 shows that films are the most commonly available medium and again organization and management and marketing are the subjects for which the most films are readily available, followed by computer science, which now represents a major development in the fields of information systems. Of approximately 1,200 items identified, roughly 200 were evaluated and 80 recommended for purchase. In addition, about 50 items were acquired for preview and retained.

2. Vertical File of Current Catalogs. Materials are made available free, on rental agreements for a single item or for a series, and by outright purchase. Since many subjects date or age rapidly, rental or loan arrangements are ordinarily preferrable to purchase. Among the free loan media are government or foundation films and printed materials of an information character as well as public relations materials designed to promote the views of a trade or special interest group. Firms in the film rental business offer combinations of equipment and films or special size equipment to fit their particular offerings. It is difficult to standardize equipment beyond the 16mm

sound or 35mm sound slide projector. Vendor catalogs generally specify the medium to be used and indicate special charges for equipment. In addition to the file of current catalogs, a larger list of vendors has been constructed by consulting the files of the Audio Visual Department at Syracuse University. This compendium is attached as Appendix Table 1.

3. Materials Recommended for Purchase and Acquired Materials. A very few sources offer a very large part of the materials recommended for purchase. Advanced Management Research offers the widest selection of current audio tape subjects, the American Management and American Marketing Associations also offer tapes, workbooks and printed materials of desirable quality. The Bureau of National Affairs offers a number of films recommended for purchase or rental, and in selected specializations publishers such as McGraw Hill and University Microfilms offer pertinent materials.

The main purpose in recommending material for purchase or rental was to indicate acceptable levels of performance. Time did not permit evaluation of more than a fraction of the learning materials available. Undoubtedly, student use and tests would be needed to demonstrate variations in learning effectiveness resulting from exposure to any particular adjuncts. However, from the available materials about 60 items were recommended for purchase as indicated in Appendix Table 2 and based on criteria in Figure 3B above.

A small collection of materials was also acquired, mostly programmed instruction and simulation workbooks. These have been transmitted with the McBee cards and Vertical Catalog files. Although a few vendors offer relatively comprehensive materials, principally Irwin Programmed Learning Aid and Future Resources and Development,

TABLE 1 - QUANTITY OF MATERIAL PROCESSED

| Areas of Competence | No. of Items Identified | No. of Items Evaluated | No. of Items Recommended for Purchase | No. of Items Acquired |
|---|---|---|---|---|
| Computer Science | 89 | 33 | 25 | 3 |
| General (Intro. to.) Bus. | 26 | - | - | 2 |
| Logistics | 5 | - | - | - |
| Business Law | 9 | 3 | 0 | 1 |
| Environmental Studies | 40 | 11 | 4 | - |
| Economics | 81 | 28 | 1 | 9 |
| Quantitative Analysis | 37 | 8 | 2 | - |
| Financial Control & Finance | 52 | 6 | 1 | - |
| Accounting | 42 | 11 | 2 | 6 |
| Personnel & Indus. Relations | 96 | 36 | 20 | - |
| Statistics | 32 | 7 | 1 | 5 |
| Organization & Management | 194 | 39 | 18 | 1 |
| Marketing, Sales & Commun. | 100 | 19 | 4 | 21 |
| Production & Prod. Management | 23 | 1 | - | |
| Not classifiable & Not Useable | 39 | 2 | - | - |
| TOTAL | 876 | 25 | 78 | 48 |

TABLE 2 - AREA OF COMPETENCE ANALYZED BY KIND OF MATERIAL

| Areas of Competence | Film | Slides | Audio Sound | P.I. & Trans. & Books | Sim. Game CAI | Videotape | Multimedia inc. Kit | Cartridge | Infor. not Available |
|---|---|---|---|---|---|---|---|---|---|
| Computer Science | 15 | 6 | - | 7 | 3 | 20 | 36 | 2 | - |
| General (Intro. to.) Bus. | 9 | - | 1 | 10 | 4 | 1 | 1 | - | - |
| Logistics | - | - | 1 | 3 | - | 1 | - | - | - |
| Business Law | 7 | - | - | 1 | 1 | - | - | - | - |
| Environmental Studies | 21 | - | 13 | 2 | 1 | - | 3 | - | - |
| Economics | 27 | - | 1 | 44 | 2 | - | 2 | - | 5 |
| Quantitative Analysis | 11 | - | - | 16 | - | 9 | 1 | - | - |
| Financial Control & Finance | 20 | - | 6 | 17 | 5 | - | 4 | - | - |
| Accounting | 1 | - | - | 41 | - | - | - | - | - |
| Personnel & Indus. Relations | 68 | - | 8 | 9 | 10 | - | 1 | - | - |
| Statistics | 3 | - | - | 23 | 3 | 1 | - | - | 2 |
| Organization & Management | 94 | 1 | 18 | 35 | 35 | 6 | 1 | 1 | 3 |
| Marketing, Sales, & Commun. | 45 | - | 9 | 28 | 13 | 3 | - | - | 2 |
| Prod. & Production Management | 14 | - | - | 2 | 7 | - | - | - | - |
| Not classifiable & Not Useable | 27 | - | 1 | 3 | 5 | 2 | - | - | 1 |
| TOTAL | 362 | 7 | 58 | 239 | 90 | 43 | 49 | 3 | 13 |

the level of such materials was uneven and their pedagogical value of questionable merit. Some outstanding materials not acquired were recommended for purchase or rental, while some of the materials acquired would not be recommended for purchase.

4. Card File of Vendor Addresses. At the beginning of the project the Instructional Technology Department furnished vendor catalogs from which items were requested for preview. In addition, names and addresses were added as new sources were discovered so that a total of approximately 130 vendors were located exclusive of the numerous branches of the U. S. Government and trade associations and quasi-public bodies. To maintain current records, it is recommended that the vendor card file whose contents are reproduced in Appendix Table 1 be periodically updated. New firms are presently entering the peripheral education industry and established firms, particularly publishers and mass media acquire, merge and divest themselves of such programs with almost startling frequency. Several professional journals such as Collegiate News and Views, and The Futurist report on new sources and new materials periodically. By referring to journals such as these the vendor list can be continuously updated.

## INFLUENCE OF LEARNING MATERIALS ON FEASIBILITY OF EXTERNAL DEGREE PROGRAM

Experience gained in locating and previewing learning materials provides clues to answer the larger question of the feasibility of an external degree program. While no substitute for experience and experiments with an operational external degree program, the review

of learning materials indicate certain difficulties which will have to be overcome to produce degree candidates.

1. The materials previewed may be catalogued on a motivational gradient. Multimedia are the most interesting, entertaining and flexible, but also the most expensive and least available. Simulations and games create great involvement but require a group and do not easily lend themselves to independent study. Programmed instruction, particularly of the linear type is fatiguing and should be used in smaller units than were generally available. Tape cassettes are easy to listen to in a car, at home, or during a coffee break, but many were not related to specific proficiency examination areas of competence nor were they accompanied by self-test task achievement workbooks. Thus, the availability of materials can differentially influence motivation to complete a prescribed course.
2. Materials previewed can be catalogued on an availability gradient. Most available were introductory first and second year materials, least available were advanced materials and a large proportion of these are tape cassettes more suitable for mid-career training than for undergraduate junior and senior students. Consequently, increasing the availability of advanced undergraduate learning materials could facilitate completion of courses required for earning a baccalaureate degree.

3. Materials previewed can be catalogued by quality of subject matter treatment. The best prepared materials are more concentrated in computer programming languages and system sciences than in other fields. The "soft science" materials in management, environment, personnel and marketing were frequently unavailable or unsuitable for collegiate instruction, being in many instances too low in level or too specific in content for general use. The implication is that more human resources must be mobilized in these fields for classroom instruction and for preparation of suitable materials. Thus, manpower requirements in certain fields affect the feasibility of an external degree program.
4. Faculty response to external degree materials. Initially a number of previewers were hostile to or indifferent to learning materials. Different previewers produced consistently differential results depending on their perceptions of the potentialities of innovation in learning. Since an external degree program requires willingness to manage rather than to convey information, enlisting faculty cooperation will prove costly and time consuming.

While none of the above considerations is essential to the success of an external degree program, they represent issues to be considered in assessing present feasibility.

# APPENDIX I - SOURCES OF LEARNING MATERIALS

Addison-Wesley Publishing Co., Inc.
Reading, Massachusetts 01867

Ad-Tapes
10455 Ashton Ave.
Los Angeles, California 90024

Advanced Management Research
280 Park Ave.
New York, New York 10017

Advanced Systems, Inc.
9575 Higgins Rd. W.
Rosemont, Illinois 60018

Air Transport Association
1000 Connecticut Ave. N. W.
Washington, D. C. 20036

Allyn and Bacon, Inc.
470 Atlantic Ave.
Boston, Massachusetts 02210

American Management Assoc.
135 West 50th St.
New York, New York 10020

American Marketing Association
230N.Michigan Ave.
Chicago, Illinois 60601

American Marketing Assoc. (Cassettes/Tec's, Inc.)
25E. Chestnut 18G
Chicago, Illinois 60611

American Petroleum Inst.
Distributed by Modern Talking Picture Service
1212 Ave. of the Americas
New York, New York 10036

American Trucking Assoc.
1616 P. St. N. W.
Washington, D. C. 20036

Association Films, Inc.
600 Madison Ave.
New York, New York 10022

Association-Sterling Films
43 West 61st
New York, New York 10023

Audication Inc.
Elsah, Illinois 62028

Audio-Visual Support Center
Bldg. T-914
Camp Drum
Watertown, New York 13601
or
Audio-Visual Support Center
Seneca Army Depot
Romulus, New York 14541

Bank of America
300 Montgomery St.
San Francisco, California 94004

Backer CPA Review Course, Inc.
416 Engineers Building
Cleveland, Ohio 44114

BFA Educational Media
2211 Michigan Ave.
Santa Monica, California 90404

BNA ( The Bureau of National Affairs, Inc.)
5615 Fishers Lane
Rockville, Maryland 20852

Bureau of National Affairs, Inc. (BNA)
1231 25th St.
N. W. Washington, D. C. 20037

Bunker Ramo
Business & Industry Div.
Trumbull Industrial
Trumbull, Connecticut 06609

Business Week: Conference On Growth
Strategies for the Corporation
330 West 42nd St., 29th Floor
New York, New York 10036

California, University of
Extension Media Center
Berkeley, California 94720

Calvin Communications, Inc.
215 W. Pershing Rd.
Kansas City, Missouri 64108

Canation Consultate Gen.
680 Fifth Ave.
New York, New York 10019

Carousel Films
order from: Audio-Visual Center
Yeshiua University
526 W. 187th St.
New York, New York 10033

CCM Films, Inc.
600 Grand Ave.
Ridgefield, New Jersey 07657

CCM Films, Inc.
34 MacQuesten Pkwy. So.
Mount Vernon, New York 10550

Center for Instructional Development
Syracuse University

Center for the Study of Democratic Institutions
Box 4546
Santa Barbara, California 93103

Chamber of Commerce of USA
1615 H St., N. W.
Washington, D. C. 20006

Chelsea House Publishers
70 W. 40th St.
New York, New York 10018

Columbia University Teachers College
525 W. 120th St.
New York, New York 10027

Colorman Corp.
1105 Truman Road
Kansas City, Missouri 64106

Columbia University Press
136 South Broadway
Irvington or Hudson, New York 10533

College Proviciency Examination Program
New York State Education Dept.
Albany, New York 12224

College Level Examination Program
Regional Office:
Edwin T. Carine Jr.
Northeastern Regional Office
475 Riverside Drive
New York, New York 10027

The Committee for Economic Development
477 Madison Ave.
New York, New York 10022

Contemporary Films
267 W. 25th St.
New York, New York 10001

Cornell University
Ithaca, New York 14850

Coronet Films
65 E. South Water St.
Chicago, Illinois 60601

Carousel Films, Inc.
1501 Broadway
New York, New York 10036

Current Affairs Films
527 Madison Ave.
New York, New York 10002

Didactic Systems, Inc.
Box 500
Westbury, New York 11590

Dow Jones & Company, Inc.
prepared by: The Educational Service Bureau
of Dow Jones & Co., Inc.
B. A. Schuler
P. O. Box 300
Princeton, New Jersey 08540

D. C. Heath & Co.
285 Columbus Ave.
Boston, Massachusetts 02116

Doubleday & Co., Inc.
501 Franklin Ave.
Garden City, New York 10017

Edex Corporation
341 Moffett Blvd.
Mountain View, California 94040

Educational Methods, Inc.
20 East Huron St.
Chicago, Illinois 60611

Educational Systems Development
31270 Stephenson Hwy.
P. O. Box 457
Royal Oak, Michigan 48068

Edutronics Systems, Internationa, Inc.
3345 Wilshire Blvd.
Los Angeles, California 90010

Encyclopedia Britannica
1822 Pickwick Ave.
Glenview, Illinois 60025

Entelek, Inc.
42 Pleasant St.
Newburyport, Massachusetts 01950

Fairchild Visuals, Dept.
7 East 12th St.
New York, New York 10003

Field Enterprises Education Corp.
Merchandise Mart Plaza
Chicago, Illinois 60654

Films, Inc.
35-01 Queens Blvd.
Long Island, New York 11101

Films, Inc.
Dist. Center
733 Greenbay Road
Wilmett, Illinois 60091

Fine Hardwoods Assn.
666 Lake Shore Dr.
Chicago, Illinois 60611

Fortune-Time, Life
Time & Life Building
Rockefeller Center
New York, New York 10020

Foundation for Economic & Business Studies
Indiana University
Bloomington, Indiana 47401

Future Resources & Development, Inc/
437 Madison Ave.
New York, New York 10022

GAF Corporation
140 W. 51st St.
New York, New York 10020

G. E. Educational Films
60 Washington Ave.
Schenectady, New York 12305

General Electric (Educational Films)
60 Washington Ave.
Schenectady Ave.
New York, New York 12305

General Programmed Teaching
424 Univ. Ave.
Palo Alto, California 94302

Gene sys Systems, Inc.
1479 Plymouth St. Mountain View
California 94040

Graflex Inc.
3750 Monroe Ave.
Rochester, New York 14603

Great Plains Nat'l ITV Library
Univ. of Nebraska
Lincoln, Nebraska 68508

Grolier Educational Corp.
575 Lexington Ave.
New York, New York 10022

Harper & Row
49 East 33rd St.
New York, New York 10016

Hendershot Programmed Learning Consultants
4114 Ridgewood 1 Bay City
Michigan 48706

Heath & Co.
125 Spring St.
Lexington, Massachusetts 02173

Henry Strauss Co.
31 W. 53rd St.
New York, New York 10019

Honeywell Institute of Information Sciences
Dept. of Instructional Materials
5 Old Concord Rd.
Burlington, Massachusetts 01803

Hughes
Bldg. 100, Mail Station A-531
P. O. Box 90515
Los Angeles, California 90009

Human Development Institute
1299 W. Peachtree St.
NE Atlanta, Georgia 30309

Human Resource Consultants
103 Sherbrooke Road
Dewitt, New York 13214

Indiana University
Audio-Visual Center
Bloomington, Indiana 47401

Iowa State Univ. Film Prod. Univ.
Alice Norton House
Ames, Iowa 50010

Irwin-Dorsey
1818 Ridge Road
Homewood, Illinois

John Wiley & Sons, Inc.
605 Third Ave.
New York, New York 10016

Joint Council on Economic Education
1212 Ave. of Americas
New York, New York 10036

Lansford Publishing Co.
2516 Lansford Ave.
San Jose, California 95125

Learning Information, Inc.
315 Central Park West
New Ycrk, New York 10025

Learning Systems Co.
1818 Ridge Road
Homewood, Illinois 60430

MPA Magazine Publishers, Assoc., Inc.
575 Lexington Avenue
New York, New York 10022

Maynard Research Council
718 Wallace Ave.
Pittsburgh, Pennsylvania 15221

McDonnell Douglas Corp., Film & TV
Communications
3000 Ocean Park Blvd.
Santa Monica, California 90406

McGraw-Hill Book, Co.
Film Div.
330 W. 42nd St.
New York, New York 10036

McMillan Co.
866 Third Ave.
New York, New York 10022

3-M Co. (Minn Mining and Manufacturing Co.)
Medical Film Library
2501 Hudson Road
St. Paul, Minnesota 55119

Metromedia Analearn
235 Park Ave. South
New York, New York 10003

Metromedia Producers Corp.
485 Lexington Ave.
New York, New York 10017

The University of Michigan
310 Maynard St.
Ann Arbor, Michigan 48108

Modern Learning Aids
1212 Ave. of the Americas
New York, New York 10036

Modern Talking Picture Service, Inc.
1212 Ave. of the Americas
New York, New York 10036

National Archives & Records Service
General Services Adm.
National Audio-visual Center
Washington, D. C. 20409

National Association of Manufacturers
277 Park Ave.
New York, New York 10017

National Cash (Microcard Editions)
901 Twenty-Sixth St., N.W.
Washington, D. C. 20037

National Center for Audio Tapes
Room 320 Stadium Building
University of Colorado
Boulder, Colorado 80302

National Council of Physical Distribution Management
% George Smith
Fabrics & Finishing Dept.
E.I. DuPont de Nemours & Co.
1007 Market St.
Wilmington, Delaware 19898

National Education Assn.
Div. of Adult Ed. Service
1201 16th St. N.W.
Washington, D.C. 20036

National Film Board of Canada
630 Fifth Ave.
New York, 19, New York

National Instructional TV Center
Box A
Bloomington, Indiana 47401

National Safety Council
425 Michigan Ave.
Chicago, Illinois 60611

National Tape Registry
Univ. of Colorado
Boulder, Colorado 80302

National Waterways Conference, Inc.
1100 17th N.W.
Washington, D. C. 20036

Nation's Business
Sound Seminar Div.
1615 H. St. N.W.
Washington, D. C. 20006

Film Library
Headquarters of the Commandant Third
Naval District
90 Church Street
New York, New York 10007

NCDPM
222 West Adams St.
Chicago, Illinois 60606

Univ. of Nebraska Press
901 North 17th Street
Lincoln, Nebraska 68508

NET & Radio Center
10 Columbus Circle
New York, New York 10019

Nightingale-Conant Corp.
6677 No. Lincoln Ave.
Chicago, Illinois 60645

Newport Computer Information, Inc.
4301 Birch St.
Newport Beach, California 92660

Nichols Business Equip. Inc.
Deere Road, Industrial Park
Syracuse, New York 13206

N. Y. State School of Industrial
& Labor Relations
Cornell University
Ithaca, New York

The University of the State of New York
New York State Education Dept.
Media Duplication and Distribution Service
55 Elk Street
Albany, New York 12224

New York Univ. Film Library
26 Washington Pl.
New York, New York 10003

Odeon Talking Picture Service
New York, New York 10036

Perceptual Development Laboratores
Distributed by:
Sight Sound Technology
P. O. Box 476
Fairfield, Connecticut 06430

Public Relations Society of American, Inc.
845 Third Ave.
New York, New York 10022

Ohio State University
Film Distrubiton Supervisor
The Ohio State University
Department of Photographs & Cinema
156 W. 19th Ave.
Columbus, Ohio 43210

Perennial Education, Inc.
1825 Willow Road
Northfield, Illinois 60093

Perceptual Development Labs
P.O. Box 1911
Big Springs, Texas 79720

OTC Information Bureau
660 Madison Ave.
New York, New York 10021

Port of New York Authority
111 Eight Ave.
at 15th St
New York, New York 10001

Prentice-Hall
Englewood Cliffs, New Jersey 07632

Public Relations Society of America
845 Third Ave.
New York, New York 10022

Prentice Hall, Inc.
Englewood Cliffs, New Jersey 07632

Republic Steel Corp.
1025 Republic Bldg.
Public Affairs Dept.
Cleveland, Ohio 44115

Resources Development Corp.
Box 591
East Lansing, Michigan 48823

Reynolds Metal Co.
P. O. Box 2346
Richmond, Virginia 23218

Richard D. Irwin, Inc.
South Holland, Illinois 60473

Roundtable Films, Inc.
321 S. Beverly Drive
Beverly Hills, California 90212

Science Research Associates
1200 South Leamington Ave.
Chicago, Illinois 60638

Sears, Roebuck, & Co.
P. O. Box 6742
Philadelphia, Pennsylvania 19132

Scott Education
Holyoke, Massachusetts 01040

Scott, Foresman, & Co.
99 Baver Drive
Oakland, New Jersey 07436

Sight Sound Technology
P.O. Box 476
Fairfield, Connecticut 06430

State Unov. of New York At Buffalo
Instructional Communication Center
Media Library
22 Foster Annex
Buffalo, New York 14214

Stuart Reynolds Product, Inc.
9465 Wilshire Blvd.
Beverly Hills, California 90212

Sutherland Educational Films
8425 W. Third St.
Los Angeles, California 90048

Tape Talks, Inc.
P. O. Box 275
Liverpool, New York 13088

Technifax/Visucom
20 First St.
Chicopee, Maine 01020

Text-Film Preview Library
McGraw-Hill Book Co.
Hightstown, New Jersey 08520

Thorne Films
1229 University Ave.
Boulder, Colorado 80302

Traffic Service Corp.
Washington Bldg.
Washington, D. C. 20005

Transportation Assoc. of America
1101 17th St., N.W.
Washington, D. C. 20036

Tweedy Transparencies
208 Hollywood Ave.
East Orange, New Jersey 07018

U. S. Army
First Army Center
Audio-Visual Support
Bldg. T-544
Fort George G. Meade, Maryland 20755

United Hospital Fund of New York
3 East 54th Street
New York, New York 10022

U. S. General Services Administration
National Archives and Records Service
National Audio-visual center
Washington, D. C. 20409

UNIVAC
(nearest office)
UNIVAC Division Speery Road
499S Warren
Syracuse, New York

University of Maine
Instructional Films
Orono, Maine

University of Michigan
AV Center
416 4th St.
Ann Arbor, Michigan 48103

Univ. of Michigan TV Center
310 Maynard St.
Ann Arbor, Michigan 48108

Univ of Minnesota
AV Education Service Rm 55
Westbrook Hall
Minneapolis, Minnesota 55455

University Microfilms Library Services
Ann Arbor, Michigan 48106

US. Navy
HDQ 3rd Naval Dist.
90 Church St.
Rm 1510
New York, New York 10007

U.S. Government Dept. of Air Force
Aerospace Audio-Visual Service
Orlando, AFB, Florida 32813

Air Force Film Library Center
8900 So. Broadway
St. Louis, Missouri 63125

U.S. Nat'l A-V Center
Nat'l Archives & Records Service
Washington, D. C. 20409

Universal Education and Visual Arts
630 9th Ave.
New York, New York 10036

Videosonic Systems
Div. of Hughes Aircraft
Fullerton, California

Visual Education Assoc.
321 Hopeland St.
Dayton, Ohio 45408

Visual Education Consultants
Box 52
2066 Helena St.
Madison, Wisconsin 53701

Visual Programming, Inc.
315 Central Park West
New York, New York

Wadsworth Publishing
Ralston Park
Belmont, California 94002

Wayne State University
Audio-Visual Utilization Center
680 Putnam
Detroit, Michigan 48202

Wayne State Univ.
Systems Distribution & Utilization Dept.
Detroit, Michigan 48202

WCBS-TV
New York, New York

Western Pub. Educational Services
Div. of Western Pub. Co., Inc.
1220 Mount Ave
Racine, Wisconsin 53404

Western Publishing Co.
850 Third Ave.
New York, New York 10022

Westinghouse Learning Corp.
2083 West Street
Annapolis, Maryland 21401

William Greaves Production
254 W. 54th St.
New York, New York 10019

## APPENDIX II - MATERIALS RECOMMENDED FOR PURCHASE OR RENTAL

| Area | Title | Vendor | Kind of Material | Price |
|---|---|---|---|---|
| Management | Management by Objectives with John Humble | BNA Films | Film | $350 |
| | Defining the Manager's Job | BNA Film | Film | $350 |
| | Understanding Motivations | BNA Film | Film | $200 |
| | The Management Game | MacMillan | Book | $3.95 |
| | PR at Work | Odean-Talking Pic. Service | Film | |
| | Human Considerations in Mgmt. | Public Film Ren. Lb. | Film | |
| | Effective Leadership | Public Film Ren. Lb. | Film | |
| | Emergent Mgmt. #8 in series | Public Film Ren. Lb. | Film | |
| | Organizational Development | Public Film Ren. Lb. | Film | |
| | Management Reading Skills | Science Res. Assoc. | Kit | |
| | National Managerial Test | Roundtable Films | Film | $350 |
| | Just Sign Here | CCM | Film | $150 |
| | Org. Behavior and the Practice of Management | Future Res. & Dev. | Film | |
| | Critical Incidents in Mgmt. | Future Res. & Dev. | Film | |
| | The Process of Management | Future Res. & Dev. | Film | |

| Area | Title | Vendor | Kind of Material | Price |
|---|---|---|---|---|
| Marketing | The Great Label Mystery | Indiana Univ. | Film | |
| | Introd. Marketing | Future Res. & Dev. | Cassettes | |
| | Study Guide - Intro. Marketing | Future Res. & Dev. | Film | |
| | A Managerial Approach: Basic Marketing | Future Res. & Dev. | Film | |
| Personnel & Indus. Relations | The ABC Man: The Manager in Mid-Career | BNA Films | Film | $395 |
| | The Fully Functioning Individ. | BNA | Film | $350 |
| | A Good Beginning | BNA | Film | $125 |
| | Management of Human Assets | BNA | Film | $200 |
| | Coping with Change | BNA | Film | $350 |
| | Communicating Mgmt.'s Point of View | U. of Maine (BNA) | Film | $275 |
| | Management by Example | BNA | Film | $350 |
| | Instruction or Obstruction | BNA | Film | $125 |
| | Building a Climate for Indiv. Growth | BNA | Film | $395 |
| | State of the Union | Carousel | Film | $240 |
| | Hard Bargaining | Indiana Univ. | Film | |
| | Mediation: Catalyst to Collective Bargaining Pt. 3 - Hard Bargaining | Indiana Univ. | Film | |
| | Mediation: Catalyst to Collective Bargaining Pt. 2 - Stalemate | Indiana Univ. | Film | |

| Area | Title | Vendor | Kind of Material | Price |
|---|---|---|---|---|
| | Mediation: Catalyst to Collective Bargaining Pt. 1 - Beginnings of Conflict | Indiana Univ. | Film | |
| Accounting | Elementary Steps in Accounting | Tweedy Transp. | Transp. | |
| Finance | The American Bus. System | National Ed. Telev. | Film | |
| Quantitative Analy. | PERT/COST | U.S. Navy | Film | |
| Gen. Business | Storing Our Nation's Goods | Wayne St. Univ. | Film | |
| | Programmed Learning Aid- Self Review in Intro. to Bus. | Irwin | Film | |
| Environmental St. and Marketing | Change: Handle with Care | CCM | Film | $150 |
| | Public Policy Affecting the Competitive Mktg. Sys. in U.S. | CCM | Film | |
| Economics | The Price Is Right | Colorma Corp. | Film | |

| Area | Title | Vendor | Kind of Material | Price |
|---|---|---|---|---|
| Computer Science | COBOL Panel Discussion - Com. Languages | Edutronics Sys. | Film | |
| | Computer Concepts - The Color Computer | Edutronics Sys. | Film | |
| | The Data Spectrum | Edutronics Sys. | Film | |
| | Essentials of COBOL 1 | Edutronics Sys. | Film | |
| | " " COBOL 2 | Edutronics Sys. | Film | |
| | " " COBOL 3 | Edutronics Sys. | Film | |
| | Essentials of FORTRAN 1 | Edutronics Sys. | Film | |
| | " " FORTRAN 2 | Edutronics Sys. | Film | |
| | " " FORTRAN 3 | Edutronics Sys. | Film | |
| | " " FORTRAN 4 | Edutronics Sys. | Film | |
| | " " FORTRAN 5 | Edutronics Sys. | Film | |
| | " " FORTRAN 6 | Edutronics Sys. | Film | |
| | Essentials of BASIC 1 | Edutronics Sys. | Film | |
| | " " BASIC 2 | Edutronics Sys. | Film | |
| | FORTRAN Panel Discussion | Edutronics Sys. | Film | |
| | Input/Output Logic | Edutronics Sys. | Film | |
| | Programmed Learning Aid - Self Review in Intro. to Bus. | Irwin | Film | |
| | Programming Program - Elements of Program Testing | Edutronics Sys. | Videotape | |

| Area | Title | Vendor | Kind of Material | Price |
|---|---|---|---|---|
| | Programming Program - Elements of Program Building | Edutronics Sys. | Videotape | |
| | Programming Program - Elements of Program Design | Edutronics Sys. | Videotape | |
| | Sequential Files - File Maintenance Logic | Edutronics Sys. | Film | |
| | Techniques and Aids Program | Edutronics Sys. | Videotape | |
| | You and the Computer | G.E. Educ. Films | Film | |

SYRACUSE UNIVERSITY FILM LIBRARY

| Area | Title | Price represents the borrowing fee for 1 week |
|---|---|---|
| Pers. Relations | Dealing with Problem People: Disorderly Worker | $5 |
| | Dealing with Problem People: The Scoffer | $5 |
| | Dealing with Problem People: The Hothead | $5 |
| | Dealing with Problem People: The Forgetter | $5 |
| | Your Job: Getting Ahead | $10 |
| Management | How Much Cooperation | $4.25 |
| | Grapevine | $5.50 |
| | Your Job: You and Your Boss | $10 |
| | In the Middle | $5.50 |
| Quantitative Ana. | Critical Path | $12.50 |
| Environ. Studies | Bill of Rights in Action: Equal Opportunity | $15 |
| | What Ecologists Do. | $10.50 |

# APPENDIX III - MATERIALS ACQUIRED

## Statistics

Descriptive Statistics, Alexander & Smith
A Programmed Introduction to Statistics, Elzey
Statistics & Measurement/A Programmed Introduction, Schoer
Business and Economic Statistics
Statistics - An Introduction to

## Marketing

Introductory Marketing, Smykay & Breibart
Principles of Marketing
Retailing
Marketing Strategy - A Marketing Decision Game
Supermarket Strategy & Instructor's Guide Book
Planning the Advertising Campaign - Book
Series in Magazine Advertising
- How to Use PIB
- Why Magazines Sell
- Magazines and Magazine Publishing - Bibliography
- A Communication Survey
- Sell the Pacesetters with Magazine
- The 1970's New Demographics
- Folio of Success
- Weight of Evidence
- Magazine Ads in Action
- Trends in Magazine
- Credibility
- Sources of Consumer Magazine Information
- Communicating the Total Corporate Personality
- Prime Prospects
- Bibliography of Consumer Magazine Research

## Management

Management Practices & Principles, McFarland

## Computer Science

PL/I A Self Instructional Manual, Barbour
Introduction to Data Processing
Basic Business Machine Calculation PI Book

## Economics

Law of Supply & Demand/A Programmed Approach, Fels
Principles of Eco. MACRO
Principles of Eco. MICRO
Introductory Economic Theory
Microeconomic Theory
Microeconomic Theory - Monopoly and Monopolistic Competition
Microeconomic Theory - Pure Competition
Microeconomic Theory - Costs of Production
Microeconomic Theory - Revenue and Market Models

General Business

Introduction of Business
World Future Society - Cassettes

Business Law

Business Law

Accounting

The Accounting Process/A Programmed Adaptation, Finney & Miller
Accounting/A Programmed Text, Edwards, Hermanson & Salmonson
Management Accounting
General Accounting - Notebook
How to Read a Balance Sheet